Degree in System Analysis and Development: A Report of a Pioneer Experience of Distance Education at IFES under the Student's Perception

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SUMMARY

This article presents an experience report about the performance of the Degree in System Analysis and Development first semester, in Distance Education modality, offered through the Universidade Aberta do Brasil (Open University of Brazil) System, based on a critical reflection of the data analysis obtained by the application of a evaluation questionnaire answered by the students. We emphasize that this is the first regular course offered in this modality by Federal Institute of Espírito Santo(IFES), former Technological Education Federal Center (CEFETES).

Key-words: Distance Education, Technology, Evasion.

1. INTRODUCTION

The Brazilian educational system faces the big challenge of increasing the educational opportunities in different teaching levels. The Distance Education (DE) appears as a strategy, once that makes the expansion of the

access to learning environments possible for all of those who, for several reasons, aren't available to attend classes.

One of the politics established by MEC (Brazil Department of Education), for the common access to college education was the creation of Sistema Universidade Aberta do Brasil (UAB) - Open University of Brazil) System - (Brazil, 2006), which offers distance courses, with MEC's participation, of public Colleges and Universities and of Counties, States and Brazilian Federal District.

In 2005, The Espírito Santo's Federal Institute - IFES participated of nº 1 UAB public edict submitting the course Degree in System Analysis and Development, having its own course project approved in April of 2006. From this date on, it began the planning to implant and execute this course in several county unities authorized by MEC.

This paper aims to present an analysis of the course first semester and the DE students profile mapping, looking for knowing their realities, necessities and expectations, that sum themselves to the diagnosis of possible factors that lead to high levels of failure and evasion..

2. THE COURSE DEGREE IN SYSTEM ANALYSIS AND DEVELOPMENT IN THE DE MODALITY

The course Degree in System Analysis and Development (SAD) has been offered at IFES in the last years in classroom modality. The course also passed through all MEC acknowledgment processes, reaching the maxim grade in all evaluated queries.

Because of IFES interest in attending to the Education National Policy of Federal Government, as for the extension and the leading of college education to counties, the course project was adapted to the distance modality. The Resolution of the Director Council nº 33/2006 (CEFETES, 2006), authorizes its implementation at IFES.

The course has three years long, with its subjects distributed in six school terms and 24000 hours of classes. The aim of the course is to graduate professionals that are able to act in the systems of information area, innovating, planning and managing information infra-structures and coordinating the information resources in organizations.

2.1 Didactic-Pedagogic Organization

In the course didactic-pedagogic organization, we may highlight some guide principles as: a teaching methodology that favors the construction of knowledge; the flexibility, the rhythm respect and the student's condition; the students' autonomy and the self-management of learning; the interaction as a shared action, enable to contribute to avoid the isolation and keep the learning motivator process; the Contextualization and encouragement to research as an educative principle; the following of the learning process by teachers, specialists, facilitators and pedagogues; the motivation with the chosen profession, the use and the dissemination of new technologies and the notion of time/ space breach opposing to the traditional school.

2.2. Multidisciplinary Team

The Multidisciplinary Team is responsible for planning, organizing, assisting and guiding the learning process, emphasizing a dialectical methodology. The team is formed by (NOBRE et. al, 2008):

Course Coordinator - Responsible for the course management.

Pedagogue – Acts in the systematic following of the teaching-learning process development, regarding the student's, teachers' and facilitators' performances.

Contents Teacher - Responsible for the elaboration of the pressed material and to make several resources available in the learning virtual environment.

Specialist Teacher – Plans and managers all the learning development process in the discipline he's responsible for.

Distance Facilitator – Acts in the guidance follow up of the students' activities through the collaborative environment of learning, solving doubts and correcting their exercises.

Classroom Facilitator – Is the person who mediates the learning and assists the students in classroom guiding their studies.

Laboratory Facilitator– Assists the students guiding their studies in the learning laboratory.

Instructional Designer - The function of this professional is to ensure that the didactic materials will have an interface of communication according course pedagogic project.

Unity Coordinator – City Hall professional responsible for supporting the academic introduction and management of the course in the county unity.

2.3. Methodology

The students must be able to leave a passive attitude, incorporating a more active role in the process, becoming agents in their own learning, searching for the construction of their knowledge (OLIVEIRA et. al, 2005). For this, there are offered ways so the students can develop their capacity of judging, becoming able to search, select and understand relevant information to learning.

> Teaching is not transferring knowledge, but creating the possibilities for its production or its construction. (FREIRE, 1996)

About guidance, orientation and the student's follow up

Each classroom facilitator is responsible for a group of 20 to 25 students, assisting them individually and in groups (from 5 to 8 members). The assistance is made in classroom, through studies and activities guidance and it is registered in individual and group files, with criteria for development analysis of the student and the group in the process.

The distance facilitator guides and follows the students through the Virtual Environment of learning. The major responsibility of this professional is with the student's development in the discipline he is responsible for.

The laboratory facilitators are available for the students in the computer laboratories, in the units of classroom support, for assisting the students in practice activities demanded in some disciplines.

The pedagogue follows the student's guidance and learning process through instruments fulfilled by the facilitator. This professional also attends to meetings with specialist teachers and the course coordinator.

It is worth to highlight that all of these professionals interact frequently in a virtual or in classroom environment. Besides, the students development, another big concern is the importance of the affective bond that, in many situations, is the key against the evasion in the DE modality. According to GARCIA (2007),

> In the DE modality, the learner's geographic detachment and the isolation may contribute to extend the distance and cause the course evasion. However, studies show that the virtual environment promotes

approaches and familiarity as close as the classroom. So, it's the teacher responsibility to be aware about this matter to guarantee the communication in the on-line course [...]

About the didactic material

The didactic material is produced by a team of specialists and using more suitable resources to the DE. We can highlight:

Pressed Material – For each discipline is elaborated a pressed material that has the discipline contents and, also, exercises, plus the student's and practice work in Laboratory guides.

Audiovisual Material – Through videoconference rooms it is possible to transmit image and voice live, by the specialist teachers or facilitators to the classroom units. However, as some units still don't have this resource, alternatives are used with virtual material.

Virtual Material – Educational computer programs are made available by CD/DVD-ROM, pages and portals on the Internet, the resources offered by the virtual environment of learning (VEL) such as: chats, forums, materials, exercises, virtual library and resources that allow the performance of cooperative/ collaborative works. The VEL is used in SAD is the Moodle (Modular Object-Oriented Dynamic Learning Environment) - Dynamic learning environment, modular and guided to objects.

3. SELECTIVE PROCESS AND SOCIAL-ECONOMIC QUESTIONNAIRE

The first selective process had its tests on 09/16/2007, fulfilling 320 admissions distributed in 13 counties in the state of ES. The classes began still in 2007.

In the selective process, at the moment of fulfilling the application form, the candidates also fulfilled a social-economic questionnaire, necessary to obtain information about the student of the course. Among other important factors, we could verify that:

- the majority of the students are single;
- The majority is from 19 to 30 years old, making an exception in three units, where almost 50% of the students are over 31 years old;
- The majority lives in the urban area, with exception of one unit, where 50% of the students are from the country;

- The majority has only the complete high school, but many students have another college degree or even master degree.
- The majority is from the state's public education system;
- The majority don't speak another language but Portuguese;
- The majority takes from 30 minutes to 1 hour to arrive in the county unit and go on foot or by bus.
- The majority has a computer at home with multimedia resources and connection with the Internet, except one unit.
- The majority use text editors and e-mail.
- The majority works and many of the students are public emplyoees.
- The majority points as the main reasons that lead the option for the course: training for work and the fact that it is distance education.
- The majority has more time to study at night.
- The majority has its family earnings lower than 3 minimum wages.

4. FIRST SEMESTER EXECUTION

Before the students have contact with the course discipline, they passed through an adaptation period. During this time, they coursed the discipline Structural and Pedagogic Principles in DE, which the goal was to present a teaching and learning methodology in Distance Education modality, establish guidance about studies and prepare the student for the use of the Virtual Environment of Learning - Moodle.

In the following, the institution offered the disciplines related to the first semester of the course: Calculus I (80h), Logic and Discrete Mathematics (80h), Computer Organization and Structure (80h), Research Methodology (40) and Entrepreneurial Communication (40h).

The disciplines were offered two by two, so the student could have fewer disciplines to be worried about at the same time.

However, it could observe during the term, that due to the fact of the disciplines be condensed in fewer weeks, the time was becoming short for the necessary development in some of them, as Calculus I. This development was also harmed due to the student's learning deficiencies started in high school. So, for the second semester, we decided that all the disciplines would be offered at once, like in classroom course.

Besides the meetings during the semester, it was created evaluation instruments, performed in the end of the semester, through Internet forms, for the team from the classroom unit and for the students.

5. EVALUATION FORMS OF THE COURSE OFFERED TO STUDENTS

The form kept the student anonymous and, through it, we looked for identifying, among others, the following behaviors and attitudes of each student regarding learning: if the student felt uncomfortable in studying by himself; if he missed the traditional interpersonal relationship between teacher and student; if he felt encouraged by classmates and facilitators, if he had the facility of conciliating the course with another activities and family commitment; how many hours a week were dedicated to the course.

For each offered discipline, we also asked if the student missed the high school basis; if the evaluation purpose and the criteria adopted were clear; if he believes that the grades he achieved are an expression of his learning, if there was excess of activities, making their accomplishment respecting the deadlines harder.

It was also considered some aspects of the guidance work performed, regarding the use of the learning environment, the didactic material and the study conditions in the unities.

6. DATA ANALYSIS

One hundred seventy one students answered the questionnaire. Using this tool we look for clarifying the determinant factors for failure and evasion.

Through Picture 1, we can observe that the major part of the students don't dedicate enough time to study. So, we realize the necessity of closer follow up and support for students in his study organization and accomplishment.

Week hours of course dedication
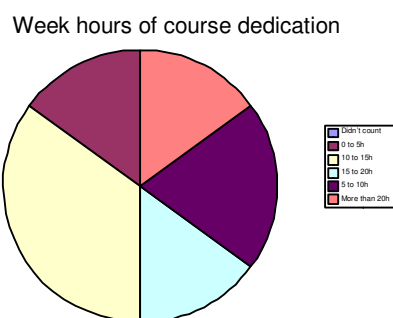
Picture 1: Hours a week dedicated to study.

About the study self management, the Picture 2 (a) shows that the students feel pretty comfortable in study by themselves. Besides, as it can see in Picture 2 (b), it is also noticeable that the absence of the interpersonal relationship with the teacher is still a challenge for most of them.

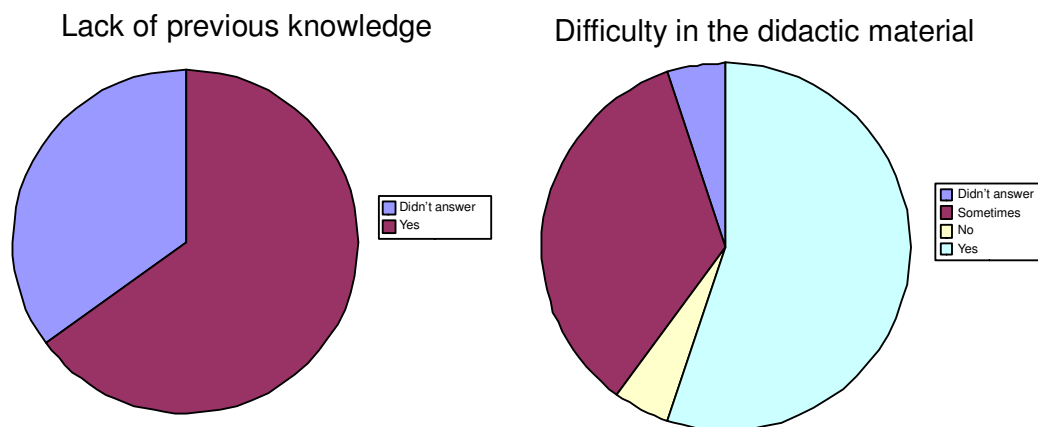Felt comfortable by himself   Teacher-student interpersonal relationship
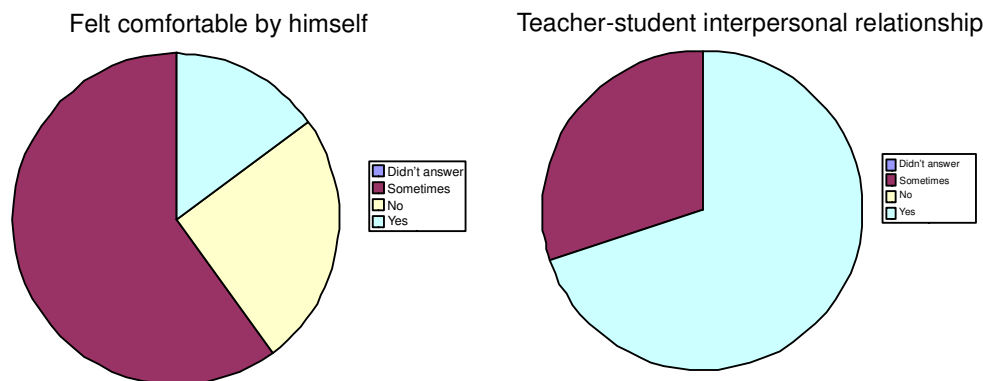
Picture (2): About the study self management. (a) Did the student comfortable in studying by himself? (b) Did the student miss the teacher-student interpersonal relationship?

Some positive points highlighted in the evaluation are: the majority of the students (69%) feel secure in attending a course because of the possibility of increasing knowledge and professional update, and by the fact it is offered by IFES (73%), an institution recognized by its teaching quality

In general, the students felt supported by the facilitators regarding the guidance for studies, support, motivation, interest in collaborating; the majority believes that the grades he achieved are an expression of his learning and the evaluation purpose and the criteria adopted in the disciplines were clear; the majority didn't have difficulty in using the Moodle and evaluated it as suitable the conditions of the study environment in the unit, except two units.. It can make an exception about the unit condition regarding the library, considered by the majority as "not enough suitable".

The main critical points of the course indicated by the students were: the excess of activities and lack of time to understand the content of some disciplines; lack of high school basis; low quality in the Internet connection in some units; difficulty to understand the didactic material Picture 4 (a), mostly due to the lack of depth in the themes (47%) and the no consideration about lack of the student's previous knowledge about the studied themes (40%) Picture 4(b).

Lack of previous knowledge

Difficulty in the didactic material

Legend (left): Didn't answer, Yes

Legend (right): Didn't answer, Sometimes, No, Yes

Picture 4: Didactic Material (a) Difficulty to understand the didactic material. (b) Difficulty to understand the didactic material due to the lack of previous knowledge.

Thus, it was realized the necessity of replanning the disciplines, the quality improvement of the available didactic material and the improvement of the structural conditions in some units. We understand that the opinion of these people about the course is related to the context they are into, the several available structures in the units, the diversity of personal, professional, cultural, economic and even regional conditions.

6. FINAL CONSIDERATIONS

As quantitative results in the performance of this first semester, 320 of the students registered in the course, we had 3 of them that dropped out of the course in the beginning, 82 failed in three or more disciplines being retained in the first semester, 121 approved for the second semester, but 59 of the approved students still have disciplines to accomplish and 114 dropouts.

In spite of the big failure and evasion rates, we could identify several causes that made this fact so alarming. It is clear that the lack of development in the content of the main disciplines brought discourage for a great part of the students, but we don't attribute this motive as the responsible for these high rates. We realized that the great majority of students never had had experience in Distance Education courses before and, because of this fact, they weren't prepared for an autonomous course. Besides, as in several counties this was the first offered public course, many students applied themselves without knowing about it.

Based on the data analysis obtained by the application of an evaluation

questionnaire answered by the students, we could plan actions to improve our methodology and correct many of the problems. For example, to deal with the big amount of activities issue, we are using now an integrated schedule looking for balancing the distribution of these activities and tests. Other aspect that has been treated more carefully is regarding affection, once the socialization has been a key spot to face the failure and the evasion in DE.

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